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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/974,056

10/11/2001

Jian-Hsing Lee

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07/08/2004

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EXAMINER

NADAV, ORI

ART UNIT

PAPER NUMBER

2811

DATE MAILED: 07/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/974,056

Applicant(s)

LEE ET AL.

Examiner

ori nada

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 April 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 8 and 10-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 8 and 10-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION***Claim Objections***

Claims 8 and 11 recite the limitations "the drain regions" and "the source regions" in lines 14 and 3, respectively. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 8 and 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chishiki (5,714,796) in view of Igarashi (4,656,491) and Steudel (3,712,995).

Chishiki teaches in figure 7 and related text an ESD protection component, comprising: at least two MOS field effect transistors 29e, 27e (FETs) of a first conductivity type, having two gates and formed in parallel on a first semiconductive layer 21 having a second conductivity type; a first well 33 having a first conductivity type, formed on the first semiconductive layer, comprising: a connecting area (part of well 33), formed between the MOS FETs; and a first doping area 26c of the second conductivity type,

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formed in the connecting area, wherein each of the MOS FETs has a source region 27a, 29a of the first conductivity type and the source regions are commonly and directly connected to a power rail, wherein the first well is electrically connected to a pad, and wherein the first doping area is directly connected to a pad, and each of the MOS FETs has a drain region of the first conductivity type and the drain regions are commonly and directly connected to a pad (Vdd pad and I/O pad).

Chishiki does not teach a first well comprising two parallel extension areas formed perpendicular to the gates of the MOS FETs.

Igarashi teaches in figures 2 and 5 a first well 12 and 31 comprising two parallel extension areas, respectively.

Steudel teaches in figure 4 a first well 69 comprising two parallel extension areas.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use a first well comprising two parallel extension areas in Chishiki's device, in order to improve the device characteristics and to provide better protection to the device by increasing the current capacity of the device and thus improving the device capability to withstand abnormally high voltage applied thereto.

The combination is motivated by the teachings of Igarashi who points out the advantages of using a first well comprising two parallel extension areas (column 3, lines 31-52).

Regarding the claimed limitation of extension areas formed perpendicular to the gates of the MOS FETs, the extension areas are formed in the semiconductor substrate and thus are perpendicular to the gates of the MOS FETs.

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Regarding claim 12, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to connect the pad to the first well through the extension areas in order to provide better protection to the device.

Response to Arguments

Applicant argues that Chishiki does not teach drain regions commonly and directly connected to a pad, because Chishiki's drain regions are connected to two different pads.

The broad recitation of the claim does not require the drain regions to be connected to the same pad. The claimed limitation of drain regions commonly connected to a pad does not mean that both pads must be connected to the same pad.

Chishiki teaches two drain regions, each of which is commonly and directly connected to a single pad.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Papers related to this application may be submitted to Technology center (TC) 2800 by facsimile transmission. Papers should be faxed to TC 2800 via the TC 2800 Fax center located in Crystal Plaza 4, room 4-C23. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The Group 2811 Fax Center number is (703) 308-7722 and 308-7724. The Group 2811 Fax Center is to be used only for papers related to Group 2811 applications.

Any inquiry concerning this communication or any earlier communication from the Examiner should be directed to *Examiner Nadav* whose telephone number is **(571) 272-1660**. The Examiner is in the Office generally between the hours of 7 AM to 4 PM (Eastern Standard Time) Monday through Friday.

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Any inquiry of a general nature or relating to the status of this application should be directed to the **Technology Center Receptionists** whose telephone number is **308-0956**

A handwritten signature in black ink, appearing to read 'Ori Nadav', with a stylized flourish at the end.

O.N.
July 2, 2004

ORI NADAV
PATENT EXAMINER
TECHNOLOGY CENTER 2800